

IN THE CLAIMS:

Please cancel Claims 33, 34 and 38, without prejudice or disclaimer of subject matter recited therein.

Please amend Claims 31, 32, 35, 36, 37, 40, 43 as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

1. (Withdrawn) A moving image coding apparatus which codes time series frames constituting moving image data, comprising:

decomposition means for decomposing a frame into a plurality of subbands having different frequency components;

first extraction means for classifying the plurality of subbands into a first group and a second group and extracting, as motion compensation target data, data of a predetermined number of upper bits of frequency component coefficient data forming subbands belonging to the first group;

second extraction means for extracting data of a predetermined number of lower bits of each of frequency component coefficient data forming subbands belonging to the first group;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by said first extraction means and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded;

first coding means for obtaining a difference value between predicted value information generated by said motion compensation means and motion compensation target data of the current frame and coding the difference value and the motion vector information;

second coding means for coding, as non motion compensation target data, data of a predetermined number of lower bits of each frequency component coefficient data extracted by said second extraction means and frequency component coefficient data of subbands belonging to the second group; and

multiplexing means for multiplexing the code data obtained by said first coding means and said second coding means.

2. (Withdrawn) The apparatus according to claim 1, wherein

said decomposition means decomposes a frame into a plurality of subbands on the basis of a discrete wavelet transformation method,

the first group comprises subbands of low frequency components including a subband LL, and

the second group comprises subbands of frequency components higher in frequency than the low frequency components.

3. (Withdrawn) The apparatus according to claim 1, wherein said second coding means performs coding for each bitplane at each bit position which represents frequency component data or for each sub bitplane.

4. (Withdrawn) The apparatus according to claim 3, wherein said second coding means includes selection means for selecting bits in order of a least significant bit to an upper bit as bitplanes serving as non coding targets, on the basis of a generated code amount, and codes bitplanes other than the bitplanes selected by the selection means.

5. (Withdrawn) A control method for a moving image coding apparatus which codes time series frames constituting moving image data, comprising:

a decomposition step of decomposing a frame into a plurality of subbands having different frequency components;

a first extraction step of classifying the plurality of subbands into a first group and a second group and extracting, as motion compensation target data, data of a predetermined number of upper bits of frequency component coefficient data forming subbands belonging to the first group;

a second extraction step of extracting data of a predetermined number of lower bits of each of frequency component coefficient data forming subbands belonging to the first group;

a motion compensation step of generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted in the first extraction step and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded;

a first coding step of obtaining a difference value between predicted value information generated in the motion compensation step and motion compensation target data of the current frame and coding the difference value and the motion vector information;

a second coding step of coding, as non motion compensation target data, data of a predetermined number of lower bits of each frequency component coefficient data extracted in the second extraction step and frequency component coefficient data of subbands belonging to the second group; and

a multiplexing step of multiplexing the code data obtained in the first coding step and the second coding step.

6. (Withdrawn) A computer program which is read and executed by a computer to function as a moving image coding apparatus which codes time series frames constituting moving image data, wherein the computer program functions as:

decomposition means for decomposing a frame into a plurality of subbands having different frequency components;

first extraction means for classifying the plurality of subbands into a first group and a second group and extracting, as motion compensation target data, data of a predetermined number of upper bits of frequency component coefficient data forming subbands belonging to the first group;

second extraction means for extracting data of a predetermined number of lower bits of each of frequency component coefficient data forming subbands belonging to the first group;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by the first extraction means and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded;

first coding means for obtaining a difference value between predicted value information generated by the motion compensation means and motion compensation target data of the current frame and coding the difference value and the motion vector information;

second coding means for coding, as non motion compensation target data, data of a predetermined number of lower bits of each frequency component coefficient data extracted by the second extraction means and frequency component coefficient data of subbands belonging to the second group; and

multiplexing means for multiplexing the code data obtained by the first coding means and the second coding means.

7. (Withdrawn) A computer readable storage medium storing a computer program as set forth in claim 6.

8. (Withdrawn) A moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 1, comprising:

separation means for separating code data of an input frame into first code data and second code data respectively corresponding to the first group and the second group;

first decoding means for generating decoded data of the upper bits of a subband belonging to the first group of a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of the subband belonging to the first group of the current frame obtained by decoding the separated first code data and decoded data of the predetermined upper bits corresponding to the first group of a preceding frame;

second decoding means for decoding the second code data;

generation means for generating decoded data corresponding to the first group of the current frame by combining decoded data of lower bits of the first group obtained by said second decoding means and decoded data of upper bits obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition means on the basis of the decoded data of the subband belonging to the first group which is generated by said generation means, and the decoded data of the subband belonging to the second group which is obtained by said second decoding means.

9. (Withdrawn) A moving image decoding apparatus decoding moving image data coded by a moving image coding apparatus which codes time series frames constituting moving image data and which comprises:

decomposition means for decomposing a frame into a plurality of subbands having different frequency components,

first extraction means for classifying the plurality of subbands into a first group and a second group and extracting, as motion compensation target data, data of a predetermined number of upper bits of frequency component coefficient data forming subbands belonging to the first group,

second extraction means for extracting data of a predetermined number of lower bits of each of frequency component coefficient data forming subbands belonging to the first group,

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by said first extraction means and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded,

first coding means for obtaining a difference value between predicted value information generated by said motion compensation means and motion compensation target data of the current frame and coding the difference value and the motion vector information,

second coding means for coding, as non motion compensation target data, data of a predetermined number of lower bits of each frequency component coefficient data extracted by said second extraction means and frequency component coefficient data of subbands belonging to the second group, and

multiplexing means for multiplexing the code data obtained by said first coding means and said second coding means,

said moving image decoding apparatus comprising:

separation means for separating code data of an input frame into first code data and second code data respectively corresponding to the first group and the second group;

first decoding means for generating decoded data of the upper bits of a subband belonging to the first group of a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of the subband belonging to the first group of the current frame obtained by decoding the separated first code data and decoded data of the predetermined upper bits corresponding to the first group of a preceding frame;

second decoding means for decoding the second code data;

generation means for generating decoded data corresponding to the first group of the current frame by combining decoded data of lower bits of the first group obtained by said second decoding means and decoded data of upper bits obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition means on the basis of the decoded data of the subband belonging to the first group which is generated by said generation means, and the decoded data of the subband belonging to the second group which is obtained by said second decoding means,

said moving image data decoding apparatus further comprising, when said moving image decoding apparatus decodes moving image data coded by a moving image coding apparatus as set forth in claim 3;



setting means for setting a predetermined number of code data of bitplanes, of the second code data, which ranges from a lower bitplane to an upper bitplane, as data other than data to be decoded.

10. (Withdrawn) The apparatus according to claim 9, wherein said setting means measures a time required to reconstruct one preceding frame, and sets the number of bitplanes as bitplanes other than bitplanes to be decoded for each subband on the basis of the measured time value.

11. (Withdrawn) A control method for a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 1, comprising:

a separation step of separating code data of an input frame into first code data and second code data respectively corresponding to the first group and the second group;

a first decoding step of generating decoded data of the upper bits of a subband belonging to the first group of a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of the subband belonging to the first group of the current frame obtained by decoding the separated first code data and decoded data of the predetermined upper bits corresponding to the first group of a preceding frame;

a second decoding step of decoding the second code data;

a generation step of generating decoded data corresponding to the first group of the current frame by combining decoded data of lower bits of the first group obtained in the second decoding step and decoded data of upper bits obtained in the first decoding step; and

a reconstruction step of reconstructing an image of the current frame by performing processing inverse to the decomposition step on the basis of the decoded data of the subband belonging to the first group which is generated in the generation step, and the decoded data of the subband belonging to the second group which is obtained in the second decoding step.

12. (Withdrawn) A computer program which is read and executed by a computer to function as a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 1, wherein the computer program functions as:

separation means for separating code data of an input frame into first code data and second code data respectively corresponding to the first group and the second group;

first decoding means for generating decoded data of the upper bits of a subband belonging to the first group of a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of the subband belonging to the first group of the current frame obtained by decoding the separated first code data and decoded data of the predetermined upper bits corresponding to the first group of a preceding frame;

second decoding means for decoding the second code data;

generation means for generating decoded data corresponding to the first group of the current frame by combining decoded data of lower bits of the first group obtained by the second decoding means and decoded data of upper bits obtained by the first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to the decomposition means on the basis of the decoded data of the subband belonging to the first group which is generated by the generation means, and the decoded data of the subband belonging to the second group which is obtained by the second decoding means.

13. (Withdrawn) A computer readable storage medium storing a computer program as set forth in claim 12.

14. (Withdrawn) A moving image coding apparatus which codes time series frames constituting moving image data, comprising:

decomposition means for decomposing a frame into a plurality of subbands having different frequency components;

first extraction means for extracting data of a predetermined number of upper bits of frequency component coefficient data constituting each subband as motion compensation target data;

second extraction means for extracting data of a predetermined number of lower bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by said first extraction means and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded;

first coding means for obtaining a difference value between predicted value information generated by said motion compensation means and motion compensation target data of the current frame and coding the difference value and the motion vector information;

second coding means for coding data of a predetermined number of lower bits of each frequency component coefficient data extracted by said second extraction means; and

multiplexing means for multiplexing the code data obtained by said first coding means and said second coding means.

15. (Withdrawn) The apparatus according to claim 14, wherein said decomposition means comprises means for decomposing a frame into a plurality of subbands on the basis of a discrete wavelet transformation method.

16. (Withdrawn) The apparatus according to claim 14, wherein said second coding means performs coding for each bitplane at each bit position which represents frequency component data or for each sub bitplane.

17. (Withdrawn) The apparatus according to claim 16, wherein said second coding means includes selection means for selecting bits in order of a least significant bit to an upper bit as bitplanes serving as non coding targets, on the basis of a generated code amount, and codes bitplanes other than the bitplanes selected by the selection means.

18. (Withdrawn) A control method for a moving image coding apparatus which codes time series frames constituting moving image data, comprising:

- a decomposition step of decomposing a frame into a plurality of subbands having different frequency components;

- a first extraction step of extracting data of a predetermined number of upper bits of frequency component coefficient data constituting each subband as motion compensation target data;

- a second extraction step of extracting data of a predetermined number of lower bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

- a motion compensation step of generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame

extracted in the first extraction step and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded;

a first coding step of obtaining a difference value between predicted value information generated in the motion compensation step and motion compensation target data of the current frame and coding the difference value and the motion vector information;

a second coding step of coding data of a predetermined number of lower bits of each frequency component coefficient data extracted in the second extraction step; and

a multiplexing step of multiplexing the code data obtained in the first coding step and the second coding means.

19. (Withdrawn) A computer program which is read and executed by a computer to function as a moving image coding apparatus which codes time series frames constituting moving image data, wherein the computer program functions as:

decomposition means for decomposing a frame into a plurality of subbands having different frequency components;

first extraction means for extracting data of a predetermined number of upper bits of frequency component coefficient data constituting each subband as motion compensation target data;

second extraction means for extracting data of a predetermined number of lower bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by the first extraction means and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded;

first coding means for obtaining a difference value between predicted value information generated by the motion compensation means and motion compensation target data of the current frame and coding the difference value and the motion vector information;

second coding means for coding data of a predetermined number of lower bits of each frequency component coefficient data extracted by the second extraction means; and

multiplexing means for multiplexing the code data obtained by the first coding means and the second coding means.

20. (Withdrawn) A computer readable storage medium storing a computer program as set forth in claim 19.

21. (Withdrawn) A moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 14, comprising:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with

respect to the predetermined upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by said second decoding means and the decoded data of the upper bits of each subband obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition means with respect to the frequency component data of the subband generated by said generation means.

22. (Withdrawn) A moving image decoding apparatus decoding moving image data coded by a moving image coding apparatus which codes time series frames constituting moving image data and which comprises:

decomposition means for decomposing a frame into a plurality of subbands having different frequency components,

first extraction means for extracting data of a predetermined number of upper bits of frequency component coefficient data constituting each subband as motion compensation target data,



second extraction means for extracting data of a predetermined number of lower bits of the frequency component coefficient data constituting each subband as non motion compensation target data,

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by said first extraction means and decoded data corresponding to motion compensation target data obtained when a preceding frame is coded,

first coding means for obtaining a difference value between predicted value information generated by said motion compensation means and motion compensation target data of the current frame and coding the difference value and the motion vector information,

second coding means for coding data of a predetermined number of lower bits of each frequency component coefficient data extracted by said second extraction means, and

multiplexing means for multiplexing the code data obtained by said first coding means and said second coding means,

said moving image decoding apparatus comprising:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of each subband in the current frame obtained by

decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by said second decoding means and the decoded data of the upper bits of each subband obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition means with respect to the frequency component data of the subband generated by said generation means,

said moving image decoding apparatus further comprising, when said moving image decoding apparatus decodes moving image data coded by a moving image coding apparatus as set forth in claim 16:

setting means for setting a predetermined number of code data of bitplanes, of the second code data, which ranges from a lower bitplane to an upper bitplane, as data other than data to be decoded.

23. (Withdrawn) The apparatus according to claim 22, wherein said setting means increases the number of bitplanes which are not to be decoded with respect to a subband in which frequency components gradually decrease in frequency, when a time required to reconstruct one preceding frame is measured, and a value of the measured time is larger than a first threshold, and decreases the number of bitplanes which are not to be decoded with respect to a subband in

which frequency components gradually increase in frequency, when the value of the measured time is smaller than a second threshold.

24. (Withdrawn) A control method for a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 14, comprising:

a separation step of separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

a first decoding step of generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

a second decoding step of decoding the second code data;

a generation step of generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained in the second decoding step and the decoded data of the upper bits of each subband obtained in the first decoding step; and

a reconstruction step of reconstructing an image of the current frame by performing processing inverse to the decomposition step with respect to the frequency component data of the subband generated in the generation step.

25. (Withdrawn) A computer program which is read and executed by a computer to function as a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 14, wherein the computer program functions as:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to the predetermined upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by the second decoding means and the decoded data of the upper bits of each subband obtained by the first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to the decomposition means with respect to the frequency component data of the subband generated by the generation means.

26. (Withdrawn) A computer readable storage medium storing a computer program as set forth in claim 25.

27. (Withdrawn) A moving image coding apparatus which codes time series frames constituting moving image data, comprising:

discrete wavelet transformation means for obtaining information of a plurality of subbands by performing discrete wavelet transformation for a frame;

inter frame coding means for performing motion compensation coding for a first group comprising subbands of low frequency components from said discrete wavelet transformation means on the basis of decoded data of each subband included in the first group when a preceding frame is coded;

intra frame coding means for performing coding within a current frame with respect to a second group comprising subbands of high frequency components higher in frequency than the low frequency components; and

multiplexing means for multiplexing code data coded by said inter frame coding means and said intra frame coding means.

28. (Withdrawn) A moving image coding method of coding time series frames constituting moving image data, comprising:

a discrete wavelet transformation step of obtaining information of a plurality of subbands by performing discrete wavelet transformation for a frame;

an inter frame coding step of performing motion compensation coding for a first group comprising subbands of low frequency components from the discrete wavelet transformation step on the basis of decoded data of each subband included in the first group when a preceding frame is coded;

an intra frame coding step of performing coding within a current frame with respect to a second group comprising subbands of high frequency components higher in frequency than the low frequency components; and

a multiplexing step of multiplexing code data coded in the inter frame coding step and the intra frame coding means.

29. (Withdrawn) A moving image decoding apparatus which decodes code data obtained by a moving image coding method as set forth in claim 28, comprising:

separation means for separating input code data into inter frame code data and intra frame code data;

inter frame decoding means for generating data of a subband of a low frequency component by decoding the separated inter frame code data with motion compensation;

intra frame decoding means for generating data of a subband of a frequency component higher in frequency than the low frequency component by intra frame coding the separated intra frame code data; and

reconstruction means for reconstructing an image of a current frame by performing inverse discrete wavelet transformation for the data of the subbands obtained by said inter frame decoding means and said intra frame decoding means.

30. (Withdrawn) A moving image decoding method of decoding code data obtained by a moving image coding method as set forth in claim 28, comprising:

a separation step of separating input code data into inter frame code data and intra frame code data;

an inter frame decoding step of generating data of a subband of a low frequency component by decoding the separated inter frame code data with motion compensation;

an intra frame decoding step of generating data of a subband of a frequency component higher in frequency than the low frequency component by intra frame coding the separated intra frame code data; and

a reconstruction step of reconstructing an image of a current frame by performing inverse discrete wavelet transformation for the data of the subbands obtained in the inter frame decoding step and the intra frame decoding step.

31. (Currently Amended) A moving image coding apparatus which codes time series frames constituting moving image data, comprising:

~~a decomposition means for decomposing unit that decomposes~~ a current frame into a plurality of subbands having different frequency components;

a first extraction means for unit that, with a threshold set for each subband being represented by TB, extracting extracts data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

a second extraction means for extracting unit that extracts data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

a motion compensation means for generating unit that generates motion vector information and predicted value information on the basis of motion compensation target data of ~~[[a]] the~~ current frame extracted by said first extraction ~~[[means]]~~ unit and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

a first coding means for obtaining unit that obtains a difference value between predicted value information generated by said motion compensation ~~[[means]]~~ unit and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

a second coding means for coding unit that encodes, in units of bitplanes, data of the lower TB bits of each frequency component coefficient data extracted by said second extraction ~~[[means]]~~ unit; ~~[[and]]~~

a multiplexing means for multiplexing unit that multiplexes code data obtained by said first coding ~~[[means]]~~ unit and said second coding ~~[[means]]~~ unit ; and



a decision unit that detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame,

wherein said second coding unit encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bit plane, decided by said decision unit when the preceding frame had been encoded.

32. (Currently Amended) The apparatus according to claim 31, wherein said decomposition [[means]] unit comprises ~~means for decomposing a unit that decomposes~~ a frame into a plurality of subbands on the basis of a discrete wavelet transformation method.

33. Canceled

34. Canceled

35. (Currently Amended) The apparatus according to claim [[34]] 31, wherein the threshold TB set for each subband is 0 for subbands of low frequency components.

36. (Currently Amended) A control method for a moving image coding apparatus which codes time series frames constituting moving image data, comprising:

a decomposition step of decomposing a current frame into a plurality of subbands having different frequency components;

a first extraction step of, with a threshold set for each subband being represented by TB, extracting data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

a second extraction step of extracting data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a the current frame extracted in the first extraction step and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

a first coding step of obtaining a difference value between predicted value information generated in the motion compensation step and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

a second coding step of encoding in units of bitplanes ~~coding~~ data of the lower TB bits of each frequency component coefficient data extracted in the second extraction step; and

a multiplexing step of multiplexing code data obtained in the first coding step and the second coding step; and

a deciding step of detecting the code data amount of the current frame multiplexed by the multiplexing step and deciding a number of bitplanes not to be encoded for the subsequent frame.

wherein the second coding step encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bit plane, decided by said deciding step when the preceding frame had been encoded.

37. (Currently Amended) A computer-readable storage medium storing a computer program which is read and executed by a computer to function as a moving image coding apparatus which codes time series frames constituting moving image data, wherein the computer program functions as:

a decomposition unit that decomposes ~~means for decomposing~~ a current frame into a plurality of subbands having different frequency components;

a first extraction unit that ~~means for~~, with a threshold set for each subband being represented by TB, extracting extracts data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

a second extraction unit that extracts ~~means for extracting~~ data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

a motion compensation unit that generates ~~means for generating~~ motion vector information and predicted value information on the basis of motion compensation target data of a the current frame extracted by the first extraction unit ~~means~~ and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

a first coding unit that obtains means for obtaining a difference value between predicted value information generated by the motion compensation unit means and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

a second coding unit that encodes, in units of bitplanes, means for coding data of the lower TB bits of each frequency component coefficient data extracted by the second extraction unit means; and

a multiplexing unit that multiplexes means for multiplexing code data obtained by the first coding unit means and the second coding unit means ; and

a decision unit that detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame,

wherein said second coding unit encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bit plane, decided by said decision unit when the preceding frame had been encoded.

38. Canceled

39. (Previously Presented) A moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus defined in claim 31, comprising:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by said second decoding means and the decoded data of the upper bits of each subband obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition means for the frequency component data of the subband generated by said generation means.

40. (Currently Amended) ~~[[A]] The moving image decoding apparatus according to claim 39, decoding moving image data coded by a moving image coding apparatus which codes times series frames constituting moving image data and comprising:~~

~~decomposition means for decomposing a frame into a plurality of subbands having different frequency components;~~

first extraction means for, with a threshold set for each subband being represented by TB, extracting data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

second extraction means for extracting data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a current frame extracted by said first extraction means and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

first coding means for obtaining a difference value between predicted value information generated by said motion compensation means and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

second coding means for coding data of the lower TB bits of each frequency component coefficient data extracted by said second extraction unit; and

multiplexing means for multiplexing code data obtained by said first coding means and said second coding means;

said moving image decoding apparatus comprising:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non-motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by said second decoding means and the decoded data of the upper bits of each subband obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition means for the frequency component data of the subband generated by said generation means.

said moving image decoding apparatus further comprising, when said moving image decoding apparatus decodes moving image data coded by a moving image coding apparatus as set forth in claim 33, further comprising

a setting means for setting a predetermined number of code data of bitplanes, of the second code data, which ranges from a lower bitplane to an upper bitplane, as data other than data to be decoded unit that counts a time period for decoding a current frame and sets a predetermined number of code data of bitplanes, of the second code data, which ranges from a lower bitplane to an upper bitplane as data other than data to be decoded for decoding a subsequent frame, in accordance with the counted time period.

41. (Previously Presented) The apparatus according to claim 40, wherein said setting means increases the number of bitplanes which are not to be decoded with respect to a subband in which frequency components gradually decrease in frequency, when a time required to reconstruct one preceding frame is measured, and a value of the measured time is larger than a first threshold, and decreases the number of bitplanes which are not to be decoded with respect to a subband in which frequency components gradually increase in frequency, when the value of the measured time is smaller than a second threshold.

42. (Previously Presented) A control method for a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 31, characterized by comprising:

- a separation step of separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

- a first decoding step of generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

- a second decoding step of decoding the second code data;

- a generation step of generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained in



the second decoding step and the decoded data of the upper bits of each subband obtained in the first decoding step; and

a reconstruction step of reconstructing an image of the current frame by performing processing inverse to the decomposition step for the frequency component data of the subband generated in the generation step.

43. (Currently Amended) A computer-readable storage medium storing a computer program which is read and executed by a computer to function as a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 31, wherein the computer program functions as:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by the second decoding means and the decoded data of the upper bits of each subband obtained by the first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to the decomposition means for the frequency component data of the subband generated by the generation means.

44. (Previously Presented) A computer readable storage medium storing a computer program as set forth in claim 43.